

## PATENT COOPERATION TREATY

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From the INTERNATIONAL SEARCHING AUTHORITY

To:  
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UNITED STATES OF AMERICA

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BOSTON OFFICE

INVITATION TO PAY ADDITIONAL FEES

(PCT Article 17(3)(a) and Rule 40.1)

Applicant's or agent's file reference <del>01977</del> -276W01	Date of mailing (day/month/year) 30/11/2000
International application No. PCT/US 00/20357	PAYMENT DUE within 45 <del>100</del> days from the above date of mailing
Applicant MASSACHUSETTS INSTITUTE OF TECHNOLOGY et al.	International filing date (day/month/year) 26/07/2000

## 1. This International Searching Authority

- (i) considers that there are 2 (number of) inventions claimed in the international application covered by the claims indicated ~~below~~ on the extra sheet:

and it considers that the international application does not comply with the requirements of unity of invention (Rules 13.1, 13.2 and 13.3) for the reasons indicated ~~below~~ on the extra sheet:

Docketed By Billing Secretary  
Due Date: 11/14/01  
Deadline: 2/28/01  
Initials: LHS

Docketed By Practice System

Re: Invitation to pay  
ART (COIN) 2/28/01

Initials: CAS

Record: ☐ will establish the international search report

- (ii) ☒ has carried out a partial international search (see Annex)

on those parts of the international application which relate to the invention first mentioned in claims Nos.:

1-34

- (iii) will establish the international search report on the other parts of the international application only if, and to the extent to which, additional fees are paid

## 2. The applicant is hereby invited, within the time limit indicated above, to pay the amount indicated below:

DEM 1.848,26 x 1 = DEM 1.848,26  
Fee per additional invention number of additional inventions total amount of additional fees

Or, EUR 945,00 x 1 = EUR 945,00

The applicant is informed that, according to Rule 40.2(c), the payment of any additional fee may be made under protest, i.e., a reasoned statement to the effect that the international application complies with the requirement of unity of invention or that the amount of the required additional fee is excessive.

3. ☐ Claim(s) Nos. \_\_\_\_\_ have been found to be unsearchable under Article 17(2)(b) because of defects under Article 17(2)(a) and therefore have not been included with any invention.

Name and mailing address of the International Searching Authority  
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Authorized officer

Maria Van der Hoeven

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-34

Nanocrystallite comprising core of MTe (claims 1-18) and method of manufacture of nanocrystallites using Te-containing compound (claims 19-32) and Te-containing compound per se (claims 33 and 34).

2. Claim : 35

Method of preparing Te-containing compound

The present application lacks unity within the meaning of rule 13 of the P.C.T. for the following reason :

The subject matter of claims 1-18 concerns (coated) nanocrystalline cores of CdTe, ZnTe, MgTe or HgTe. The method of their manufacture involving a Te-containing compound is covered by claims 19-32, whilst the Te-containing compound per se is the subject of claims 33 and 34. The subject matter of claim 35 concerns solely the preparation of Te-containing compounds.

The application seeks to solve the problem of producing nanocrystalline cores which photoluminesce with a quantum efficiency of at least 20% as stated in claim 1. To address this problem the applicant proposes a method of manufacture as claimed in claim 19 involving a Te-containing compound which is claimed per se in claims 33 and 34. In the prior art document WO 9926299, cited in our search report (and in the description as US application 08/969302), coated nanocrystalline cores of CdX (X = S, Se and Te) are claimed which photoluminesce with a quantum yield greater than 30%. Furthermore, the Te-containing compound defined by the subject matter of claims 33 and 34 is not novel with respect to the prior art indicated by the Beilstein Registry Numbers 1860016 and 2097823.

The subject matter of claim 35 does not contain special technical features (in the meaning of rule 13.2 of the P.C.T.) to address the problem of producing nanocrystallites with desired properties. As such there is no common inventive concept based on the same technical features between the subject matter of claim 35 and the remainder of the claims. In fact, the subject matter of claim 35 addresses a different problem, namely that involved in producing a class of Te-containing compounds.

For this reason, the application lacks unity of invention.

**Annex to Form PCT/ISA/206  
COMMUNICATION RELATING TO THE RESULTS  
OF THE PARTIAL INTERNATIONAL SEARCH**

International Application No  
PCT/US 00/20357

1. The present communication is an Annex to the invitation to pay additional fees (Form PCT/ISA/206). It shows the results of the international search established on the parts of the international application which relate to the invention first mentioned in claims Nos. 1-34
2. This communication is not the international search report which will be established according to Article 18 and Rule 43.
3. If the applicant does not pay any additional search fees, the information appearing in this communication will be considered as the result of the international search and will be included as such in the international search report.
4. If the applicant pays additional fees, the international search report will contain both the information appearing in this communication and the results of the international search on other parts of the international application for which such fees will have been paid.

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 99 26299 A (MASSACHUSETTS INST TECHNOLOGY) 27 May 1999 (1999-05-27)	1-4, 7-14, 17, 18
A	claims 1,5	19
X	--- DATABASE CROSSFIRE 'Online! Beilstein Institut zur Förderung der Chemischen Wissenschaft; Beilstein Registry Numbers 2097823 and 1860016, XP002152687 abstract	33, 34
A	--- MURRAY C B ET AL: "SYNTHESIS AND CHARACTERIZATION OF NEARLY MONODISPERSE CDE (E = S, SE, TE) SEMICONDUCTOR NANOCRYSTALLITES" JOURNAL OF THE AMERICAN CHEMICAL SOCIETY, US, AMERICAN CHEMICAL SOCIETY, WASHINGTON, DC, vol. 115, 1993, pages 8706-8715, XP000196555 ISSN: 0002-7863 cited in the application page 8706 -page 8707	1, 19
A	--- US 5 711 803 A (PEHNT MARTIN ET AL) 27 January 1998 (1998-01-27) example 1	19
A	--- --- -/-	19



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

\* Special categories of cited documents :

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

- \*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- \*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- \*G\* document member of the same patent family

Annex to Form PCT/ISA/206  
COMMUNICATION RELATING TO THE RESULTS  
OF THE PARTIAL INTERNATIONAL SEARCH

International Application No  
PCT/US 00/20357

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 97 10175 A (TRINDADE TITO ; BRIEN PAUL O (GB); IMPERIAL COLLEGE (GB)) 20 March 1997 (1997-03-20) -----	

# Patent Family Annex

Information on patent family members

International Application No

PCT/US 00/20357

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
WO 9926299	A	27-05-1999	EP	1034571 A	13-09-2000
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US 5711803	A	27-01-1998	AU	7369896 A	17-04-1997
			US	6126740 A	03-10-2000
			WO	9712082 A	03-04-1997
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WO 9710175	A	20-03-1997	EP	0850194 A	01-07-1998
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